

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
LYNDON B. JOHNSON SPACE CENTER**

**JUSTIFICATION FOR OTHER THAN FULL AND OPEN COMPETITION
PURSUANT TO 10 U.S.C. 2304(d)(1)(B) and Federal Acquisition Regulation 6.302-1**

- 1. This document is a justification for other than full and open competition prepared by the NASA Johnson Space Center.**

- 2. The nature and/or description of the action being approved:**

This justification provides the rationale for contracting by other than full and open competition with Hi-Shear Technology for the acquisition of 500 NASA Standard Detonators (NSD).

- 3. Description of the supplies or services required, include an estimated value:**

Hi-Shear Technology provides the NSD, P/N SKD26100094 per NASA requirements. The NSD is the standard detonating device for Orion and is provided as Government Furnished Equipment (GFE) to all users by Johnson Space Center (JSC). The NSD consists of a NASA Standard Initiator (NSI) threaded into a housing containing a sensitive primary explosive train consisting of a Lead Azide column progressing into a final output pyrotechnic charge of RDX. The output of the NSD produces a 0.040 inch minimum dent depth into a steel block, when fired at ambient temperature. The estimated cost for 500 NSD units is \$284,000.

- 4. Statutory authority permitting other than full and open competition:**

The statutory authority permitting Other than Full and Open Competition for this action is FAR 6.302-1(a) (2) (ii), "Only One Responsible Source and No Other Supplies or Services Will Satisfy Agency Requirements." NSDs are unique pyrotechnic devices developed, designed, and space flight qualified by a sole NASA contractor (Hi-Shear Technology). Continued support by Hi-Shear Technology in the production of the NSDs is essential to prevent a substantial duplication of cost to the Government that is not expected to be recovered through competition and unacceptable delays in fulfilling the agency's requirements.

- 5. A demonstration that the proposed contractor's unique qualifications or the nature of the acquisition requires use of the authority cited:**

The NSD is a pyrotechnic device containing explosive components. There is only one qualified source for the detonators at this time. To qualify a second source would duplicate cost to the Government and be cost prohibitive. If the procurement is delayed, the International Space Station program may experience schedule delays. NSD are Criticality-1 catastrophic flight hardware meaning a failure can cause death and/or vehicle loss.

6. Description of the efforts made to ensure that offers are solicited from as many potential sources as practicable:

A synopsis for this effort was issued on the NASA Acquisition Internet Service on September 12, 2011 to discuss the rationale for continuing with Hi-Shear Technology on a sole source basis and the type of work that will continue to be performed on the purchase order. Companies had the opportunity to respond to the synopsis if they possessed the qualifications and capabilities to perform the NSD work. The synopsis closed on September 19, 2011.

7. Description of the market research conducted, and the results, or a statement of the reasons a market survey was not conducted:

NSDs are unique pyrotechnic devices available from only one source.

8. Other facts supporting the use of other than full and open competition:

Qualifying other sources is not fiscally practical. The cost to qualify another source with no parts delivered is cost and schedule prohibitive, and this approach is not in the best interest of the Government.

The procurement offices will coordinate with the Contracting Officer's Technical Representative (COTR) to ensure any needs for publicizing formal requests for information (RFIs) and sources sought synopses are met.

9. Sources, if any, that expressed an interest in writing in the acquisition:

Ensign-Bickford Aerospace & Defense Company responded to the synopsis but this procurement requires previous qualification by NASA in order to be eligible to manufacture the devices.

10. The actions, if any, the agency may take to remove or overcome any barriers to competition before any subsequent acquisition for the supplies or services required:

This Agency will continue to remove or overcome any barriers to competition before any subsequent acquisition for these services required. To do so, the procurement offices will coordinate with the Contracting Officer's Technical Representative (COTR) to ensure any needs for publicizing formal requests for information (RFIs) and sources sought synopses are met. These postings will enable the COTR and technical community to gather crucial information regarding the options and available sources for the future testing needs of the agency. The technical offices and COTR will continue to monitor industry capabilities by attending related seminars, and industry forums. The COTR will also continue to review relevant technical journals, Government and commercial data bases, and internet resources for relevant information.

Technical Officer: I certify that the supporting data presented in this justification are accurate and complete.

Asia Quince
Asia Quince, Engineer (COTR)

10/31/11
Date

Contracting Officer: I hereby determine that the anticipated cost to the Government will be fair and reasonable and certify that this justification is accurate and complete to the best of my knowledge and belief.

P. S. Hollis
Peter Hollis, Contracting Officer

11/1/11
Date